BURLINGTON COUNTY

Cancer Control and Prevention Capacity and Needs Assessment Report Summary

December 2004

Funds and Support Provided By

New Jersey Department of Health and Senior Services
Center for Cancer Initiatives
The Office of Cancer Control and Prevention

Notices:

Medicine is an ever-changing science. As new research and data broaden our knowledge, conclusions may change. The authors and reviewers have endeavored to check the sources of information and to utilize sources believed to be the most reliable in an effort to provide information that is as complete as possible at the time of submission and generally in accord with appropriate standards. However, in view of the possibility of human error or changes in medical science, this work cannot be warranted as being complete and accurate in every respect. Readers are encouraged to confirm the information contained herein with other sources. Information concerning some of the sources of data, rationale for its utilization, acknowledgements of specific parties contributing to these efforts, as well as links to cancer-related information may be found at www.umdnj.edu/evalcweb/.

This county-level Report Summary summarizes the larger county report, which is a baseline evaluation of this county, performed as part of the Capacity and Needs Assessment initiative of the New Jersey Comprehensive Cancer Control Plan (www.state.nj.us/health/ccp/ccc_plan.htm), under the direction of the New Jersey Department of Health and Senior Services (NJDHSS) Office of Cancer Control and Prevention (OCCP) (www.state.nj.us/health/ccp/), the University of Medicine and Dentistry of New Jersey (UMDNJ) (www.umdnj.edu/evalcweb/), and the Evaluation Committee of the Governor's Task Force on Cancer Prevention, Early Detection and Treatment in New Jersey (Task Force Chair: Arnold Baskies, MD; Evaluation Committee Chair: Stanley H. Weiss, MD).

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Suggested citation for this Report Summary:
Mouch JF, Colbert HD, Allen RF. County Cancer Capacity and Needs Assessment Report Summary, December 2004. In: *New Jersey Statewide County-based Cancer Capacity and Needs Assessment Initiative, 2003-2004 Report Summaries*, Editors: Stanley H. Weiss (UMDNJ) and Margaret L. Knight (NJDHSS).

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Introduction

The Office for Cancer Control and Prevention (OCCP) of the New Jersey Department of Health and Senior Services (NJDHSS), in conjunction with the mandate from the Governor's Task Force on Cancer Prevention, Early Detection and Treatment in New Jersey (Task Force), is developing comprehensive capacity and needs assessment reports concerning cancer, individualized for each county in the state. This Report Summary highlights key findings in the Burlington County report.

The Task Force released New Jersey's Comprehensive Cancer Control Plan (NJ-CCCP) in 2002.[1] Each county was commissioned to develop a comprehensive capacity and needs assessment report, as part of the initial implementation steps for the NJ-CCCP. The full Report and this Report Summary were developed under the direction of the University of Medicine and Dentistry of New Jersey (UMDNJ) and the Evaluation Committee of the Task Force, in furtherance of the NJ-CCCP, which can be found at: http://www.state.nj.us/health/ccp/cc_plan.htm. This particular assessment was funded by the OCCP through the following New Jersey Cancer Education and Early Detection (NJCEED) county agency in Burlington County: the Burlington County NJCEED Program operated by the Burlington County Health Department.

The purpose of the capacity and needs assessment reports is to identify the major cancer issues affecting each county and the county's available resources, or lack thereof, for cancer prevention, screening and treatment, and to propose recommendations for improvement. The Burlington County Cancer Capacity and Needs Assessment (C/NA) report[2] analyzes the population demographics and the cancer incidence and mortality rates and distribution of stage at diagnosis for the seven priority cancers of the NJ-CCCP (breast, cervical, colorectal, lung, oral, melanoma, and prostate), as well as the current resources available, in the county. These data guided the development of evidence-based recommendations and interventions address cancer control priorities at local and state levels.

Method of Preparing the Burlington County Cancer Capacity and Needs Assessment

The lead agency responsible for the Burlington County report is the Burlington County Health Department. The Burlington County NJCEED program is based at the Burlington County Health Department located in Mt. Holly, New Jersey. In November 2003, the Burlington County Health Department contracted with the Community Planning and Advocacy Council (CPAC), based in Pennsauken, NJ, to conduct the evaluation and analysis and to complete the report. CPAC had been working with the Camden County NJCEED projects and CAMConnect on the Camden County report since August, so it was beneficial to have brought in to the Burlington County

process an organization already working on the project. The Burlington County Health Department had begun work on the report and on collection of primary information through the Cancer Resource Database of New Jersey (CRDNJ)[3] for the capacity portion of the assessment, and CPAC was contracted with to complete both the data collection process and the report.

Since November 2003, CPAC staff have attended regular meetings of the County Evaluators at the state level for training, guidance, peer learning, and peer review of the county reports. CPAC has also attended quarterly meetings of the Burlington County NJCEED Coalition and provided updates on the progress of the report. CPAC has been in constant contact with the Burlington County Health Department to report on preliminary findings, seek their feedback, and incorporate their suggestions for recommendations and future steps to be taken. CPAC has built upon the contacts the Burlington County Health Department had already made by actively being involved in the collection of primary information through the CRDNJ.

Section 1 – County Demographic Profile

Burlington County is the largest county in New Jersey, covering over 820 square miles – an area of approximately 524,000 acres.[4] More than 60% of these acres are non-developable lands designated as federally owned, state owned, farmland preservation, wetlands or other slope sensitive land. Burlington County extends from the Delaware River to the Great Bay on the Atlantic Ocean and is bordered by Atlantic, Camden, Mercer, Monmouth, and Ocean counties. Producing sweet corn and fruit, more acres in Burlington County are devoted to farming than in any other county in the state. The county is the second largest timberland producer in the state and the second largest cranberry-producing county in the nation.

- According to the 2000 U.S. Census, Burlington County has a total population of 423,394 with 7.4% or 31,399 persons living in a rural area.[a,5]
- Of Burlington County's total population, 78% is white, 15% is black, with the remainder split among Asians, American Indian, and other races.
- Those of Hispanic origin, any race, make up 4.2% of the population of the county.[b]
- The median age of Burlington County residents (37.1 years) is similar to the state median age (36.7 years).
- More than one-half (51%) of the population is between the ages of 20 and 55, while the remaining quarters are split among those 19 and under and those 55 and older.
- The population among the 75- to 84-year age group increased 57% from 1990 to 2000, and the population over the age of 85 increased by 46%. These age groups make up 5.7% of the total population in the county (6.4% statewide).
- The median household income in Burlington County is $58,608, slightly higher than the state average ($55,146).

[a] In general, percentages in this report are rounded to two digits.

[b] Hispanics and non-Hispanics may be of any race. Racial categories include both Hispanics and non-Hispanics.

- The percentage of families living below the federal poverty line (3.2%) is about one-half of the state average (6.3%).
- Of the county's residents aged 25 and over, 3.3% have less than a basic education (less than or equal to 8th grade), which is lower than in the corresponding state figure (6.6%). However, a higher percentage of residents in the county have a greater than high school education (56.0%) when compared to New Jersey (52.8%).
- A variety of languages are spoken in the county, although Spanish (3.9%) is the only language other than English spoken by greater than 1% of the population.

Section 2 – Overview of Overarching Issues

Burlington County does not have a comprehensive cancer control plan such as the NJ-CCCP. There are active coalitions such as the Burlington County NJCEED Coalition, the South Jersey Cancer Coalition of the American Cancer Society, and the Burlington County Community Health Assessment Advisory Group led by the Burlington County Health Department.

This section of the full C/NA report provides an overview of the most recent health needs assessments conducted in Burlington County. The overarching issues of the NJ-CCCP as they apply to Burlington County are addressed in chapters in the full report on Access and Resources, Comprehensive School Health Education, Providers and Treatment, Advocacy, Palliative Care, Nutrition and Physical Activities, Childhood Cancer, and Resources External to Burlington County.

This section of the report also discusses the capacity of Burlington County to provide cancer services to its residents as related to the CRDNJ (see Table 1). The CRDNJ process represents a statewide effort to assess the capacity of agencies and providers in each county to meet the needs for cancer care of the county's residents. The database provides information about the capacity of the county to provide services and programs including education, screening activities, early detection, diagnosis, and treatment, and care for cancer patients and their families throughout the county. Information for the CRDNJ was collected in a variety of ways: personal outreach to providers, telephone calls, faxes, letters, and distribution of forms at community events. As of June 10, 2004, a total of 275 forms were received, representing 197 Burlington County agencies, organizations, healthcare institutions, schools, and worksites, documenting various cancer-related programs and services

Table 1. Summary of Burlington County Respondents in the CRDNJ

Type of Facility Completing Survey	Total Number of Forms Received
Total	**275**
Activities	
Located inside Burlington County	11
Located outside Burlington County	14
Breast Oncologist (located outside county)	1
Complementary and Alternative Medicine	
Located inside Burlington County	1
Located outside Burlington County	1
Clinics*	2
County Office	1
Dentist	
Located inside Burlington County	7
Located outside Burlington County	2
Dermatologist	
Located inside Burlington County	5
Located outside Burlington County	4
Employer	
Located inside Burlington County	26
Located outside Burlington County	1
Faith-Based Organization	29
Gynecology Oncology (Located outside Burlington County)	1
Hematology/Oncology*	
Located inside Burlington County	2
Located outside Burlington County	2
Hospital*	
Located inside Burlington County	2
Located outside Burlington County	3
Non-Profit Agency	
Located inside Burlington County	2
Located outside Burlington County	2
Obstetrician/Gynecology	10
Palliative Care*	
Located inside Burlington County	9
Located outside Burlington County	1
Program of Palliative Care Program	
Located inside Burlington County	6
Located outside Burlington County	3
Primary Care Physician	7
Pediatric Oncology (located outside Burlington County)	1
Program of Cancer Center (located outside Burlington County)	17
Radiation Chemotherapy*	
Located inside Burlington County	1
Located outside Burlington County	1
Radiology*	
Located inside Burlington County	9
Located outside Burlington County	4
School	82
Surgery Center	
Located inside Burlington County	2
Located outside Burlington County	3

For services designated by an asterisk (*) in the summary table, 100% of providers in the county for that particular service supplied information to the CRDNJ. For Burlington County this reflects 100% participation by clinics, hospitals, palliative care providers, radiation and chemotherapy, radiology, and hematology/oncology service providers.

The CRDNJ process of collecting cancer resource information at the county level was the first such comprehensive assessment ever conducted. The major challenge in compiling the CRDNJ involved identifying persons with the appropriate knowledge and authority to provide the necessary information.[c] For Burlington County, some cancer prevention and awareness activities are underrepresented in the responses to the CRDNJ survey. Not all participants who conduct outreach activities completed Activity Forms; only 25 activity forms were completed for Burlington County.

Those organizations that participated in the CRDNJ reported on a variety of services and programs for cancer care. However, this capacity and needs assessment also helped identify the following gaps in the county's resources:

- No comprehensive health assessment in Burlington County has been done since 1995.
- The last Human Services Needs Assessment in the county was completed in May 2000 as a joint effort of the Burlington County Human Services Advisory Council (HSAC) and the United Way of Burlington County[6]. Many of the human service agencies in the county provide supportive services that impact cancer patients; therefore, an updated Human Services Plan is needed.
- Based on the last health assessment of Burlington County that included cancer issues (1995),[7] not all women in the county were receiving recommended cancer screening. The results of this assessment suggest that more women aged 50 and over in the county need to be reached to improve the mammography screening rate. In addition, more women in the county need to receive Papanicolaou ("Pap") tests for cervical cancer screening.
- The Burlington County NJCEED program had a goal for fiscal year 2004 of screening 350 women for breast and cervical cancers, 100 men for prostate cancer, and 250 men and women for colorectal cancer. While the Burlington County NJCEED program has exceeded its number of female enrollees, like many of the county NJCEED programs it struggles to reach male participants and has in the past not met the projected goal for men. The Burlington County NJCEED program's outreach to men has not been realized.
- While the Breast and Cervical Cancer Treatment Act provides a mandate for treatment of a woman diagnosed with breast or cervical cancer, no such mandate exists for prostate and colorectal cancer. With regard to prostate cancer, the Burlington County NJCEED program struggles to maintain relationships with physicians for appropriate diagnosis and treatment. Some physicians in the county have severed their previous relationships with the Burlington County NJCEED program in which they had provided diagnostic follow-

[c] In many instances several phone calls were required to identify the correct person. Once contact was made with the correct person, that person often had questions about the use of the information they were providing or misunderstood the importance of the CRDNJ and thus provided incomplete information.

up for men with positive screening results. Follow-up and treatment for men diagnosed with cancer is lacking in the current program.

- While New Jersey Core Content Standards must be adhered to by all public schools, private and parochial schools are not required to comply with these standards. Further, while public school students are required to "learn and apply health promotion concepts and skills to support a healthy, active lifestyle,"[8] there is no requirement that students learn the relationship of sexually transmitted diseases (STDs) to cervical cancer, for example.
- Efforts to reach out to established groups that advocate for young people need to be furthered. The Burlington County Community Partnership for Healthy Adolescents was formed to provide a forum where adults and youth work together to design activities for youth to help reduce teen pregnancy, STDs, drug and alcohol use. Efforts could be made to include programming that educates young girls that engaging in sexual activity at an early age makes them not only more susceptible to STDs but also more likely to develop cervical cancer than those who delay sexual activity until their 20s.

Section 3 – Overall Cancer Burden

All incidence[9] and mortality[10] rates cited herein are per 100,000 and age-adjusted to the 2000 U.S. population standard[5]. All county and state rates are average annual rates during 1996–2000. For simplicity, the 1996–2000 average annual age-adjusted incidence or mortality rate hereinafter will be abbreviated and referred to as incidence or mortality rate, respectively. The reason the five-year average has been routinely used is that the small number of cases in a single year leads to statistical variations that are not generally meaningful. For U.S. incidence rates, 1999 or 2000 rates were used. Unless otherwise specified, all rates are for invasive cancer only.

The 2000 Burlington County Profile for Health Status[11] shows cancer as the second leading cause of death after heart disease for county residents.

Incidence Rates for All Cancer Sites Combined

Burlington County's incidence rate per 100,000 population for all cancer sites combined was 615.5 new cases in men and 448.0 new cases in women. County rates were slightly lower than the state rates, as shown in Table 2.

- The highest incidence rates of cancer for women in Burlington County, as well as New Jersey, were for breast, lung, and colorectal cancer.
- Among men in the county and state, prostate cancer had the highest incidence rate, followed by lung cancer and then colorectal cancer.

Table 2. Incidence Rates per 100,000 for Seven Priority Cancer Sites[9]
Burlington County Compared to New Jersey during 1996–2000

	Burlington County	New Jersey
All Cancer Sites Combined*		
Male	615.5	628.7
Female	448.0	453.7
Seven NJ-CCCP Priority Cancers:		
1. Prostate	193.8	194.3
2. Breast, Female	141.7	138.5
3. Lung, Male	94.6	92.5
Lung, Female	59.4	55.4
4. Colorectal, Male	76.7	79.0
Colorectal, Female	53.9	54.4
5. Melanoma, Male	18.2	20.1
Melanoma, Female	8.5	11.9
6. Oral/Oropharyngeal, Male	14.0	15.7
Oral/Oropharyngeal, Female	6.5	6.4
7. Cervical	7.5	10.9

* "All cancer sites combined" includes all invasive cancer, not just the seven NJ-CCCP priority cancers.

Mortality Rates for All Cancer Sites Combined

- The death rate due to all cancer sites combined among males in Burlington County (268.7 per 100,000) was similar to the corresponding rate among New Jersey males (261.4). The death rate due to all cancer sites combined among females in the county (181.2) was also very similar to the corresponding state rate (181.7).
- The mortality rates from colorectal cancer among Burlington County men (31.2) and women (21.4) were slightly higher than the corresponding rates among New Jersey men (29.5) and women (20.1), and 1.2 times higher than the rates among U.S. men and women.
- Black women in Burlington County had a higher mortality rate from breast cancer than did white women, with this difference most notable in the 65+ age group.

Estimated Prevalence of Cancer

It is estimated that over 15,000 Burlington County residents were living with diagnosed cancer at any point in time during 1996–2000, which represents 3.6% of the county's total population.[12]

Highlights of the Seven NJ-CCCP Priority Cancers

- The seven priority cancers of the NJ-CCCP accounted for 64% and 62% of new cases of cancer among males and females, respectively, in Burlington County.

- These seven priority cancers accounted for 56% and 57% of all cancer deaths among males and females, respectively, in Burlington County. Burlington County's mortality rates were higher than the corresponding New Jersey rates for five of the seven NJ-CCCP priority cancers (colorectal cancer among males and females, lung cancer among males and females, melanoma among females, oral/oropharyngeal cancer among males and females, and prostate cancer).

Table 3 provides a summary of Burlington County's estimated prevalence, incidence rates, and mortality rates for all cancer sites combined and for the seven NJ-CCCP priority cancers during 1996–2000.

Table 3. Summary Table
Selected[a] Age-Adjusted[b] Burlington County Cancer Statistics, 1996–2000[c]

	Estimated Prevalence[d]	Incidence per 100,000[e]	Mortality per 100,000[e]
All Cancers,[f] Burlington County			
Male	6,192	615.5	268.2
Female	9,122	448.0	181.0
NJ-CCCP Priority Cancer by Gender			
Breast, female	3,708	141.7	29.3
Cervical, female	285	7.5	3.1
Colorectal, male	711	76.7	31.2
Colorectal, female	988	53.9	21.4
Lung, male	240	94.6	75.8
Lung, female	304	59.4	45.3
Melanoma, male	343	18.2	4.4
Melanoma, female	317	8.5	***2.2***
Oral/Oropharyngeal, male	173	14.0	***5.1***
Oral/Oropharyngeal, female	129	6.5	***1.9***
Prostate, male	2,612	193.8	35.6

[a] Based upon the NJ-CCCP.
[b] Age-adjusted to 2000 U.S. Census population standards. Age-adjustment is used to describe rates in which statistical procedures have been applied to remove the effect of differences in composition (specifically, variations in age distribution) of the various populations. This is important in order to portray an accurate picture of the burden of cancer, since cancer is known to disproportionately affect persons of differing ages.
[c] Rates are average annual rates during the time period 1996 through 2000.
[d] Prevalence is the measurement of burden of disease in the population at a particular point in time. Within this report, it represents the number of people alive who have ever been diagnosed with the disease. Prevalence figures given here are rough theoretical estimates, based on a number of assumptions, and computed by applying national prevalence-to-incidence ratios to Burlington County's average annual crude incidence counts for the five years 1996–2000, separately for each gender. Actual prevalence is likely to be of the same order of magnitude as the estimate.[12]
[e] Incidence and mortality are gender-specific, age-adjusted annual rates, not counts. A rate at least 10% higher than the corresponding state rate is shown in bold italics.
[f] "All cancers" represents the sum of all invasive cancer during the time period, not just the seven cancers presented in detail below.

Most Commonly Diagnosed Cancers in Burlington County

The three most commonly diagnosed cancers in Burlington County were prostate, lung, and colorectal cancer among men (Table 4), and breast, lung, and colorectal cancer among women (Table 5). These two tables also demonstrate the disparities among different populations in cancer incidence and mortality rates or percentage of late-stage diagnosis of cancer for the top three cancers.

Table 4.
Three Most Common Cancer Diagnoses in Men in Burlington County, 1996–2000

	Prostate Cancer			Lung Cancer		Colorectal Cancer		
	Incidence Rate[9]	Regional/ Distant Stage at Diagnosis[9]	Death Rate[10]	Incidence Rate[9]	Death Rate[10]	Incidence Rate[9]	Regional/ Distant Stage at Diagnosis[9]	Death Rate[10]
Total Men	193.8	11.9%	35.6	94.6	75.8	76.7	54.3%	31.2
White	175.4	12.2%	33.0	94.3	74.7	76.8	53.7%	30.6
Black	314.8	11.6%	66.3	98.8	95.2	78.7	57.7%	40.2
Hispanic	276.6[a]	17.7%[b]	*	138.9[b]	*	94.0[b]	88.9%[b]	*

Rates are per 100,000 and age-adjusted to 2000 population
* Statistic not displayed due to fewer than 5 persons in the category.[13]
[a] During the period of 1996–2000, there was a substantially higher prostate cancer incidence rate (624.4 per 100,000) among Hispanic males in the year 1996, a rate 2.4–3.9 times higher than the rate for any other single year during this period, thus raising the average for the five-year period. The 1997–2001 average annual incidence rate among Hispanic males in Burlington County was 217.7, which was 1.2 times higher than the New Jersey rate (186.8) for the same time period, suggesting that the rate is persistently somewhat higher among Hispanic men in the county.
[b] Based on a low number of cases.

Table 5.
Three Most Common Cancer Diagnoses in Women in Burlington County, 1996–2000

	Breast Cancer			Lung Cancer		Colorectal Cancer		
	Incidence Rate[9]	Regional/ Distant Stage at Diagnosis[9]	Death Rate[10]	Incidence Rate[9]	Death Rate[10]	Incidence Rate[9]	Regional/ Distant Stage at Diagnosis[9]	Death Rate[10]
Total Women	141.7	27.3%	29.3	59.4	45.2	53.9	55.7%	21.4
White	144.9	26.5%	29.6	59.9	45.3	54.9	56.1%	21.7
Black	130.6	33.8%	32.4	62.1	49.4	45.3	47.7%	19.8
Hispanic	137.8[a]	32.3%[a]	*	52.6[a]	*	66.9[a]	38.5%[a]	*

Rates are per 100,000 and age-adjusted to 2000 population.
* Statistic not displayed due to fewer than 5 persons in the category.[13]
[a] Based on a low number of cases.

Highlights of all seven priority cancers follow, beginning with the top cancer sites.

Cancer Burden by Site

Prostate Cancer

The incidence rate for prostate cancer was the highest in the county for any cancer. While no clear guidelines exist in support of screening for early detection of prostate cancer, information on screening options should be provided to all men. In particular, black men – with an incidence rate (314.8 per 100,000) that was almost 80% higher than that for white men in the county (175.4 per 100,000) – should be the focus of outreach and education about screening options for prostate cancer.

The death rate for black men from prostate cancer (66.3 per 100,000) was twice that of white men (33.0 per 100,000). The percentage of regional- and distant-stage cancer at time of diagnosis – a measure often related to discrepancies in early detection efforts – did not differ between the racial groups. There is a need to further evaluate the increased prostate cancer incidence and mortality among black men.

Breast Cancer

Despite having a lower incidence rate, black women in Burlington County had a higher mortality rate from breast cancer than did white women (see Table 5). Though the differences are not statistically significant, black women and Hispanic women had higher percentages of late-stage breast cancer diagnosis, which is associated with higher death rates.

Breast cancer mammography screening rates need to improve in Burlington County as in the state overall, particularly for minority groups. Among 3,923 New Jersey women aged 50 and over who were interviewed from 2000 through 2002, 78% reported having had a mammogram within the past two years.[14,15] Based on interviews of 120 women in Burlington County, the county rate did not differ significantly from the state rate.[15] The 1998 baseline percentage of the *Healthy New Jersey 2010* objective for women having a clinical breast exam and mammography within the past two years shows that black women in New Jersey (58.5%) do not receive screening as often as do white women (66.7%).[16]

Lung Cancer

Due to the lack of effective screening methods to detect lung cancer at an early stage and the limited efficacy of treatment for advanced lung cancer, survivorship for lung cancer is of shorter duration than for many other cancers.[1] An estimated 87% of lung cancer cases are attributed to tobacco smoking.[1] The main strategies for reducing lung cancer deaths involve teaching young persons not to initiate smoking and helping current smokers participate in smoking cessation programs. Exposure to environmental tobacco smoke (ETS), or “second-hand” smoke, remains an additional important issue.[1]

Colorectal Cancer

Among older men, the colorectal cancer mortality rate in Burlington County was slightly higher than the state and national rates. Men aged 50+ in Burlington County had a mortality rate of 108.3 per 100,000, 5.6% higher than that of the state (102.6) and 22% higher than that of the nation (88.9). Burlington County women also had a higher mortality rate from colorectal cancer than did the state or the nation in the older age groups. Females aged 50+ in Burlington County had a colorectal cancer mortality rate of 72.5 per 100,000, a rate 4.6% higher than the state mortality rate (69.3) and 18% higher than the national rate (61.3).

Utilization of colorectal cancer screening by New Jersey residents in general and Burlington County residents in particular can be improved substantially. Among 4,961 New Jersey adults aged 50 and over who were interviewed from 2001 through 2002, 56% reported having had colorectal cancer screening (either with a fecal occult blood test within the past year or a sigmoidoscopy or colonoscopy ever).[14,15] Based on interviews of 128 adults in Burlington County, the county rate did not differ significantly from the state rate.[15]

Increased educational effort focused on the benefits of colorectal cancer screening is recommended. There are four recommended methods for colorectal cancer screening, including the fecal occult blood test (recommended for use annually), flexible sigmoidoscopy (recommended once every five years), colonoscopy (recommended once every ten years), and double contrast barium enema (recommended once every 5-10 years).[1] Routine colonoscopies can detect polyps in the precancerous stage and facilitate removal of polyps at an early stage of the disease.[1]

Melanoma of the Skin

Melanoma of the skin is responsible for about three-fourths of all deaths from skin cancer.[1] Exposure to ultraviolet (UV) light is the primary causal agent. Exposure to sun without proper protective cover makes all races susceptible to this disease. White populations have greater risk because of their light skin color. Skin cancer risk increases with every incidence of sunburn and is a cumulative risk over the years.[17] Therefore an increase in the incidence rate of melanoma is seen with age, particularly for persons aged 50 and over, in Burlington County, as well as in New Jersey.

Oral/Oropharyngeal Cancer

Men in Burlington County had a slightly lower oral/oropharyngeal cancer incidence rate (14.0 per 100,000) than did New Jersey as a whole (15.7). White women in Burlington County had a higher oral/oropharyngeal incidence rate (7.2 per 100,000) than white women in the state (6.3). The oral/oropharyngeal mortality rates in Burlington County (5.1 per 100,000 males and 1.9 per 100,000 females) were higher than the corresponding state rates (4.2 per 100,000 males and 1.6 per 100,000 females).

Smoking and high consumption of alcohol are two major risk factors for oral and oropharyngeal cancer.[1] According to the NJ-CCCP, New Jersey males have traditionally had higher incidence

rates of oral and oropharyngeal cancer than females, "although in recent years the gap is narrowing due to the increasing number of women who began smoking over the past three decades."[1] Raising awareness among and providing education to all adults, dentists, and healthcare providers are recommended strategies for increasing early detection of oral cancer.

Cervical Cancer

Cervical cancer is a highly preventable and curable disease if detected early. The Papanicolaou ("Pap") test, introduced in the 1940s, detects some precancerous as well as cancerous lesions and is covered by most private and public health insurance.[1] Some companies have moved to cover a more sensitive and specific screening test, the AutoPap, which uses a thin preparation of cells along with computer-assisted technology.

Among 7,689 New Jersey women with no history of hysterectomy who were interviewed from 2000 through 2002, 83% reported having had a Pap smear within the past three years.[14,15]Based on interviews of 203 women in Burlington County, the county rate did not differ significantly from the state rate.[15] Within the county, the screening rate increased significantly during the period 1992–2002, as it did in the state overall.[15] Human papillomavirus (HPV), a sexually transmitted infection, is the most significant risk factor for developing cervical cancer; recommendations for the incorporation of HPV testing[d] as part of a pelvic examination have been developed by the American College of Obstetricians and Gynecologists.[1,18]

Though deaths from cervical cancer have fallen dramatically since 1970, these deaths still occur disproportionately among women who do not have access to regular screening or adequate follow-up and treatment.[1] To overcome barriers such as linguistic isolation,[e] cultural norms, and poverty, special programs to identify women at risk earlier in the progression of the disease are required. Burlington County programs for women's health, particularly the NJCEED program that provide services for the estimated 22,683 uninsured and underinsured women in the county, should adopt the *Healthy New Jersey 2010* target: Increase to 75% the percentage of women aged 65 and over and to 85% of women 18–64 years of age who had a Pap test within the past two years.[16]

Other Cancer Sites/Issues

HIV/AIDS. The human immunodeficiency virus (HIV) is the etiologic agent of the acquired immunodeficiency syndrome (AIDS) and is associated with the development of several specific cancers.[1] HIV/AIDS disproportionately affects minorities, who account for 75% of HIV/AIDS cases in New Jersey.[19] As of June 2003, Burlington County had approximately 464 persons living with HIV/AIDS, ranking it among the 10 lowest counties in New Jersey for HIV/AIDS prevalence.[19] Both healthcare providers and patients need to understand the risks.

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[d] For example, the ViraPap™ will detect which strains of HPV DNA, if any, are present.

[e] A linguistically isolated household is one in which no member 14 years old and over (1) speaks only English or (2) speaks a non-English language and speaks English "very well". In other words, all members 14 years old and over have at least some difficulty with English.

Bladder Cancer. New Jersey's bladder cancer incidence rates were higher than the nation for all race and ethnic categories.[10] Mortality due to bladder cancer is higher in New Jersey than in the nation overall. The American Cancer Society estimated that bladder cancer in 2003 would be the 6th most common cause of cancer mortality in the U.S. and 5th most common in New Jersey.[20] For Burlington County, bladder cancer incidence and mortality tended to resemble the statewide picture.

Characteristics of the Population of Focus for Reducing Cancer Burden

- Cancer incidence and mortality rates increase with age for both men and women. Burlington County's 53,218 residents aged 65 and older are an important population of focus for planning and outreach programs to reduce the cancer burden.
- Some of the highest rates of cancer are found among minority groups. Burlington County's population is comprised of 15% (64,071) black residents and 4.2% (17,632) Hispanic residents. Overall, black men in New Jersey, as well as in the United States, are more likely to develop and die from cancer than persons of any other racial and ethnic group.
- Whites make up 78% of the Burlington County population; the white population comprises the largest actual number of new cancer cases when compared with other races.
- The National Cancer Institute's (NCI's) Atlantic Region Cancer Information Service (CIS) provided Consumer Health Profile maps and data for Burlington County which help define areas of medically underserved residents in need of cancer screening and smoking cessation.[f,21] Based on the NCI's CIS estimates, approximately 23,100 women and 21,200 men aged 18 and over are medically underserved. The estimates of the county's medically underserved population for specific areas of cancer screening or intervention are below.[21]
    - Approximately 16,400 women and 14,600 men are in need of smoking cessation.
    - Approximately 6,400 men aged 50 and over are in need of prostate cancer screening.
    - Approximately 14,100 women aged 40 and over are in need of breast cancer and cervical cancer screening.
    - Approximately 8,000 women and 6,500 men aged 50 and over are in need of colorectal cancer screening.

[f] Consumer Health Profile maps of each New Jersey county were provided in June 2003 to the NJDHSS and UMDNJ and each county by the National Cancer Institute's Atlantic Region Cancer Information Service, along with ongoing technical support. (More information can be obtained from: 1-800-4-CANCER.) The term medically underserved refers to individuals who lack access to primary care either because they are socioeconomically disadvantaged and may or may not live in areas with high poverty rates or because they reside in rural areas. The term also refers to individuals that reside in geographic areas where the Index of Medical Underservice (IMU) is 62 or less. The IMU is a weighted score derived from four variables: the ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of population below the federal poverty level, and the percentage of the population aged 65 years and older.

Summary of Behavioral Factors Increasing Cancer Risk

- Based on responses to the New Jersey Behavioral Risk Factor Survey in 1999,[14] it is estimated that as many as 82,000 men and women in Burlington County had sunburn within the past year, increasing cumulative UV exposure and risk for developing melanoma.[1,5]
- Chronic alcohol use,[g] a risk factor for oral and colorectal cancer, affects an estimated 13,700 adults in Burlington County (4.3% of the county's population aged 18 and over).[5,14]
- Obesity and lack of regular exercise are two general life style issues related to higher rates of cancer. According to Behavioral Risk Factor Surveillance System (BRFSS) data, 19% of New Jersey adults were obese[h] in 2002.[14]

Additional Factors Influencing the Cancer Burden

In addition to the behavioral factors above that increase an individual's cancer risk, other factors may influence the county's cancer burden.

- *Lack of health insurance*. According to BRFSS data, 13.3% of New Jersey adults had no health insurance in 2002.[14] In Burlington County, 10.6% of the population was uninsured, according to the New Jersey Primary Care Association.[22] A National Academy of Sciences' Institute of Medicine study published in 2002 indicated that uninsured individuals are less likely than insured individuals to receive cancer screening, thereby delaying diagnosis and leading to premature death.[23]
- *Poverty*. In Burlington County, 4.7% of the population lives below the federal poverty level; 5.7% of Burlington County's children (under the age of 18) live below the poverty level.[5] Persons with low income may be eligible for Medicaid; an estimated 4.5% of the county's population (19,128 residents) is enrolled in Medicaid.[22]
- *Charity care reimbursement*. For the 2002 fiscal year, only 12% of costs for charity care services provided by community hospitals in Burlington County were reimbursed. The low reimbursement rate places a burden on the healthcare systems in the county. The Burlington County NJCEED program is doing its best to engage persons who are uninsured or marginalized due to socioeconomic constraints, race, or ethnicity.
- *Cancer screening behavior.* Cancer screening rates can also be improved among those with healthcare coverage. According to the 2002 *New Jersey HMO Performance Report*,[24] an average of 22% women aged 18 to 64 years enrolled in a managed healthcare plan have not received a Pap test within the past three years, and 29% of women aged 52 to 69 years have not received a mammogram within the past two years.
- *Medical and research expertise*. It is hoped that new affiliation agreements among providers in the county with specialized cancer centers will bring their medical services,

[g] Based on responses that five or more drinks had been consumed on five or more occasions in the past month.[14]
[h] Obesity is defined as a Body Mass Index (BMI) of 30.0 or greater, using current standards. BMI is calculated by multiplying the weight (in pounds) by 703, then dividing the result by the square of the height (in inches).

educational, and research expertise to the county. Lourdes Health System has a formal agreement with the University of Pennsylvania in Philadelphia, and Virtua Health System, another major health provider in South Jersey, has formed an affiliation agreement and is known as Fox Chase Virtua Health Cancer Center.

Section 4 – Recommendations

The overall recommendation is that Burlington County cancer coalitions, programs, and healthcare providers should follow the NJ-CCCP goals, objectives, and strategies in so far as possible in their implementation of activities and services for cancer care. A condensed version of the NJ-CCCP is included in the full Capacity and Needs Assessment for Burlington County in Appendix J. County/local-level and statewide priorities are recommended for the top four cancers in Burlington County and reference the NJ-CCCP goals, using the following codes: Prostate Cancer (PR), Breast Cancer (BR), Lung Cancer (LU), and Colorectal Cancer (CO). Also referenced are the NJ-CCCP goals with respect to overarching issues – including Access and Resources (AC), Palliation (PA), Nutrition and Physical Activity (NP), Advocacy (AD) – emerging trends (ET), and implementation (IM).

The NJ-CCCP offers four basic guiding steps for implementation of the Burlington County cancer prevention and control plan:

- Increasing awareness and education for cancer prevention: BR-1.2, CO-1.1, LU-1.1, and PR-1.1, AC2.1.
- Expanding outreach efforts to educate residents and healthcare professionals about cancer screening, early detection, and treatment: BR1.1, BR1.3, BR1.4, BR3.1-2, CO1.2, CO1.3, LU2.1-2, LU4.1, PR2.1, PR2.2, PR4.1, AC2.1, AC4.2, AC4.3, PA1.1.
- Supporting efforts for holistic and comprehensive cancer treatment, including participation in clinical trials: BR2.1, BR2.2, BR5.1, CO2.1, CO3.1-2, LU3.1, PR3.1, PR5.2, AC1.1-2, NP3.1-2, AC4.1, AD3.1, PA2.1-4.
- Addressing issues within the health system that are implicated in the reasons for health disparities: BR4.1-2, CO2.1, LU goals 4–6, PR5.1, PR5.3, AD3.1, AC1.1, AC1.2, AC3.1, AC4.1-3.

From these four guiding steps, local and statewide priorities can be drawn.

Recommendations for County and Local Priorities

Recommendations for the county health coalitions and health institutions include prevention, screening, education and general awareness, and further research:

Prevention of Cancer

- *Education.* Ensure that primary prevention strategies include education of all school-age children and youth to increase awareness of risk factors at an early age. (AC-2.1.4-7)
- *Physical activity.* Join with other healthcare coalitions that promote the benefits of exercise and increased physical activity and advocate promotion of decreasing cancer risks as an added benefit. Target multi-media campaigns to include the cancer message along with general health benefits of exercise. Initiate information-sharing with health educators in the public and private sector. (NP1.3, NP2.1, NP2.2)
- *Smoking cessation programs.* Target the zip codes identified in the NCI Consumer Health Profile maps. Continue to advocate for strict laws to prevent smoking/secondary smoke in public places and spaces. Increase the involvement of primary care providers in smoking cessation programs, in assessing their patients' use of tobacco-related products, and in referring their patients to smoking cessation programs (i.e., New Jersey Quitnet and Quitline). Place focus specifically on those under 18 years of age. (LU1.1)
- *Preventive anti-tobacco campaigns (youth programs to not start to smoke)*. Target the zip codes identified in the NCI Consumer Health Profile maps. Involve school health programs and Parent Teachers Associations as an integral part of the campaign. (LU1.1)
- *Increase consumption of fruits and vegetables*. Join with other healthcare coalitions that promote the health benefits of increasing fruit and vegetable consumption in the diet and advocate promotion of decreasing cancer risk as an added health benefit. (NP1.1-2, NP2.1-2)

Cancer Screening and Treatment

- Increase screening for breast cancer in women, prostate cancer in men, and colorectal cancer in men and women (BR1.1, BR1.3-4, BR3.1-2, CO1.2-3, LU2.1-2, LU4.1, PR2.1-2, PR4.1, AC2.1, AC4.2-3).
    - Target municipalities with the largest populations of minority groups to increase screening for breast, cervical, colorectal, and prostate cancer.
    - Plan an intervention to inform and update primary healthcare providers and the cancer centers in the county about the services of the NJCEED program as well as about the NJ-CCCP goals, objectives, and strategies. (AC1.1-2. AC3.1, AC4.1-3)
- Pursue affiliations with physicians in the county to provide cancer services to patients who are positively diagnosed with colorectal or prostate cancer.

General Cancer Awareness and Education

- Encourage collaboration among cancer coalitions in the county with the American Cancer Society South Jersey Cancer Coalition to explore effective interventions (e.g., mass media campaigns) on the issues of cancer prevention, cancer screening, and early detection for the top four cancer sites, as well as the remaining three priority cancer sites of the NJ-CCCP. (AC2.1, BR1.2-3, CO1.1-3, LU1.1, PR1.1, PA1.1)

- Following establishment of the county's Federally Qualified Health Center (FQHC), establish a special monitoring project for cancer established in medically underserved areas. Programs for education, screening, treatment, and after-care to minority groups and rural populations could be piloted in the areas surrounding the FQHC and then disseminated to other parts of the county. (AC-1.1.1-3, AC-1.2.1-4, AC-2.1.1-7, AC-3.1.1-7, AC-4.1.1-7, AC-4.2.1-6, AD-1.1.1, AD-1.2.1-2, AD-2.1.1-3, AD-2.2, AD-3.1.1-3, PA-1, PA-2, ET-2.1.1-2, ET-2.2.1-4, IM-1.1.1-3, IM-1.4.1-3.)
- Increase general education and awareness about the NJ-CCCP and the Burlington County Cancer Needs and Capacity Assessment Report by conducting educational sessions and planning activities with the Burlington County NJCEED Coalition and healthcare providers, working with the Burlington County Health Department in planning for the 2005 Community Health Improvement Plan for Burlington County, and supporting the Burlington County NJCEED Coalition's participation in the formation of the South Jersey Cancer Coalition to be headed up by the American Cancer Society.

Further Research

- Local health coalitions and NJCEED programs should conduct operational research on primary care providers' knowledge, practice, and promotion of cancer prevention, risk factor awareness, screening, detection, treatment, post-treatment support, palliative care, and end-of-life care in order to focus future efforts on provider education as part of the statewide implementation of the NJ-CCCP. (AC4.1-3, BR2.1-2, BR3.1, CO1.3, CO2.1, LU2.1-2, PR4.1, PA1.1)
- Advocate for participation in pilot testing a Cancer Behavioral Risk Factor Survey in the American Cancer Society Southern Region of New Jersey or in the tri-county region of Burlington, Camden, and Gloucester counties. Findings from this pilot test would help county health and human services providers identify county-level health disparities in cancer care and focus planning efforts for health services and education in the county.

Recommendations for Research-Tested Intervention Programs

Although proven interventions that modify behavior about cancer awareness, prevention, and screening exist, few evidence-based cancer prevention or educational programs are implemented in Burlington County. (AC1.1-2, AC2.1, AC4.1-3)

- Recommend to all health coalitions and institutions the selection of successful research-based programs to become the basis of intervention programs that address the top four cancers (prostate, breast, lung, and colorectal) and/or the other three priority cancers of the NJ-CCCP (melanoma, cervical cancer, or oral cancer).
- The pilot testing and research previously recommended as a county/local priority would yield new baseline information about the level of cancer awareness, prevention, and screening behavior of residents and the level of knowledge and screening practices of primary care providers. The effectiveness of the chosen intervention programs could then be evaluated against this baseline information. If the chosen evidence-based program for cancer outreach does not produce the desired outcome – an increase in enrollment in

NJCEED screening programs or an increase in screening rates in primary care practices – for example, then a periodic evaluation should result in a change in the chosen strategy or program. (AC4.3, NP2.1-2, BR.3.1-2, CO1.3, LU2.1, LU3.1, LU4.1, LU5.1, LU6.1, PR3.1, PR4.1-2, PR5.1-3. ET1.1-2, ET2.1-2, ET3.1, ET4.1-5, IM1.4, EV1.1 at the county level)

Recommendations for Statewide Priorities

Evaluation and Development of a Model NJCEED Program. Recommend to the NJDHSS Office of Cancer Control and Prevention that they support evaluation of the experiences of county NJCEED programs. The Burlington County report findings suggest that a statewide evaluation of this federal/state NJCEED funding model would support expansion of funding by the state and federal agencies and would enable the following (AC1.1-2, AD1.1-2, AD2.1-2):

- Develop "best practices" from strategies of the county NJCEED programs, e.g., those that help to narrow gaps in services due to health disparities and inequalities; those with increased registration; those that have attracted men for prostate screening. (AC-1, AC-4)
- Advocate for maintaining or increasing level of financial support for NJCEED programs, especially for provision of education, awareness, and screening within vulnerable populations and areas of poverty. (AD-1)
- Develop a "toolkit" of county-level resources and evidence-based interventions for NJCEED programs. (AC-4.1)

Development of an Advocacy Plan with Other Healthcare Coalitions. Recommend to the NJDHSS Office of Cancer Control and Prevention and NJ-CCCP Task Force to continue to build advocacy partnerships among like-minded groups, to work towards implementation of a national program that works to increase insurance coverage for all Americans. This national effort would specifically include cancer prevention, cancer screening, early detection, and all necessary treatment and after care. (AD1.1-2, AD2.1-3, AD3.1, IM1.2)

Closing Remarks

The Cancer Capacity and Needs Assessment provides a detailed baseline assessment for the Burlington County. The data, interpretations, and recommendations were developed to provide a wide array of public health and medical personnel with standardized information and detailed analyses that can help guide and focus their efforts at the county level, including such local health initiatives as the forthcoming Community Health Improvement Plans. The reports from all of the counties will collectively inform the continuing comprehensive cancer control efforts of the Office of Cancer Control and Prevention of the New Jersey Department of Health and Senior Services; the Governor's Task Force on Cancer Prevention, Early Detection and Treatment in New Jersey; and the University of Medicine and Dentistry of New Jersey.

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